



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,405	06/23/2003	Keith A. Bair	GEO-14752	1671
7609	7590	05/13/2004	EXAMINER	
RANKIN, HILL, PORTER & CLARK, LLP			SASTRI, SATYA B	
925 EUCLID AVENUE, SUITE 700			ART UNIT	
CLEVELAND, OH 44115-1405			PAPER NUMBER	
			1713	

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/602,405

Applicant(s)

BAIR ET AL.

Examiner

Satya B Sastri

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-16, 22-31 and 33 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 12, 17-21 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1713

DETAILED ACTION

1. This office action is in response to application filed on June 23, 2003. *Claims 1-33* are now pending.

Claim Objections

2. *Claim 12* is objected to for describing R3 twice in the claim language. Appropriate correction is required.
3. *Claim 9* is objected to for describing R3 as "methyl" instead of "methylene".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. *Claims 22 and 23* are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for reciting the molar ratios of the various monomeric units outside of the scope of the parent *claim 12*.

Claim Analysis

Art Unit: 1713

6. Before the outstanding rejections are discussed, the following analysis of preamble to claims has been made:

- It is noted here that the preamble in composition claims recites a statement of intended use or purpose, and as a rule does not limit the scope of the claim, since the statements in preamble merely define the context in which the invention operates, *DeGeorge v. Bernier*, 226 USPQ 758,761, n.3 (Fed.Cir. 1985).
- It is the Examiner's opinion that the preamble language **does not provide the antecedent basis for terms in the body of the claim.**
- It is the Examiner's opinion that the preamble language is not essential to understand **limitations and/or terms in the claim body.**

Claim Rejections - 35 USC § 102 and 103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 1713

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. *Claims 1-3, 5-7, 9, 10, 12-16* are rejected under 35 U.S.C. 102(b) as anticipated by Buentello et al. (US 2003/0052303 A1).

The prior art to Buentello et al. discloses water-soluble or water-dispersible polymers useful for controlling scale formation and deposition. The novel polymeric compositions which are useful in the invention comprise water-soluble or water-dispersible copolymers of ethylenically unsaturated monomers with sulfate, phosphate, phosphite or carboxylic terminated polyalkylene oxide allyl ethers (page 1, paragraph 0002). The copolymers or terpolymers comprise monomer units E, which may be unsaturated carboxylic acid, sulfonic acid or phosphonic acid, the second monomer unit which comprise 1-100 oxyalkylene attached to an anionic group selected from SO₃, PO₃ or COO and a cationic moiety not limited to Na, K, CA or NH₄, and an optional third unsaturated monomeric unit (column 2, paragraphs 0017-0020). A preferred copolymer is based on acrylic acid and polyethyleneglycol monoallyl ether sulfate where the number ethylene oxide range from 1 to 100 with the cationic moiety as Na, K, CA or NH₄ (page 2, paragraphs 0022-0025). The molecular weight of the copolymers may range from 1,000-1,000,000 (page 3, paragraph 0031). Conventional polymerization techniques disclosed herein must yield random copolymers (page 3, paragraph 0030). Thus, *claims 1-3, 5-7, 31, 33* are anticipated by Buentello et al. based on the claimed copolymer composition. The copolymers of the prior art are capable of being used as cement or concrete dispersants.

With regard to *claim 9* which further includes monomer C with formula 1, it is inferred that when R₂ is H, R₃ is methylene, R₄ is polyalkylene oxide and R₅ is M''(SO₃) with M'' as a water soluble cation, the monomer C is essentially same as monomer B disclosed in claim 2.

Art Unit: 1713

Similarly, in *claim 12*, monomer F can be reduced to comonomer with structural formula II shown in the claim body. Thus, *claims 9, 10, 12-16*, are also anticipated by Buentello et al.

10. *Claims 4 and 11* are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Buentello et al. (US 2003/0052303 A1).

The prior art to Buentello et al. is presented in paragraph 9 above and is incorporated herein by reference. The prior art copolymers comprise polyethyleneglycol monoallylether sulfate as a comonomer as disclosed in the instant invention. However, no additional details on the synthetic procedures to prepare the same are disclosed in the prior art. Where product by process claims are rejected over a prior art product that appears to be the same, the burden is shifted to applicants to establish an unobvious difference, even if the production processes are different. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983). Furthermore, the patentability of a product claim rests on the product formed and not on the method by which it is produced. In re Thorpe, 227, USPQ 984 (Fed. Cir. 1985).

11. *Claims 1, 5-7, 24-27, 30, 31, 33* are rejected under 35 U.S.C. 102(b) as anticipated by Kadano et al. (US 4,652,621).

The prior art to Kadano et al. is in regard to a **water-soluble copolymer** which is characterized by being an addition copolymer comprising 5-70 mole% of (a) an N-substituted α,β -unsaturated dicarboxylic acid 5-membered ring imide having a **sulfo or sulfoxy group-containing** residue attached to the nitrogen atom, 30-95 mole% of (b) an α,β -unsaturated

Art Unit: 1713

aliphatic monocarboxylic acid and 0-50 mole% of (c) an α,β -unsaturated dicarboxylic acid (abstract). The sulfonic acid group (sulfo group) is represented by SO_3H and the **sulfoxy groups are represented by $-\text{OSO}_3\text{H}$** (column 2, lines 42-45). The **number average molecular weight** of the copolymer may range from **1,000-2,000,000**. A **part or whole of the sulfo or sulfoxy groups and carboxyl groups** may be combined with **monovalent or polyvalent cations** to form a salt, and specific examples of such a salt include alkali metal or alkaline earth metal salts such as those of sodium, potassium, magnesium, calcium, **ammonium salts, amine salts with trimethylamine**, triethylamine and triethanolamine etc. (column 3, lines 37-57). The polymeric sulfonic acids and sulfates containing carboxyl and sulfo or sulfoxy groups in the molecule may be used as **cement dispersant**, gypsum dispersant etc. (column 4, lines 38-53). Thus, *claims 1, 5-7, 24-27, 30, 31, 33* are anticipated by Kadano et al.

12. *Claims 28 and 29* are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadano et al. (US 4,652,621) in view of Tsubakimoto et al. (US 4,870,120).

The prior art to Kadano et al. is adequately presented in paragraph 5 above and is incorporated herein by reference.

The difference between the prior art and the present invention is in the amount of cement dispersant used in cementitious compositions.

The prior art discloses that the water-soluble polymer may be used as a cement dispersant but does not disclose the useful range of the dispersant in such compositions. Such a range is known to one of ordinary skill in the art. For instance, the prior art to Tsubakimoto et al. discloses a cement dispersant based on a polymer comprising sulfonic acid type unsaturated

Art Unit: 1713

monomer (abstract). The prior art discloses that the cement dispersant may be used in an amount of 0.01 to 5 parts by weight per 100 parts by weight of cement (column 6, lines 28-33). Thus, it would have been obvious for one of ordinary skill in the art to include at least 0.01-5 parts of the cement dispersant disclosed by Kadano et al. in cementitious compositions and thereby obtain the present invention (*claims 28 and 29*).

Allowable Subject Matter

13. *Claims 8, 17-21, 32* are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The claims are allowable over closest references to Buentello et al. (US 2003/0052303 A1), Kadano et al. (US 4,652,621) and Tsubakimoto et al. (US 4,870,120). The present claims are directed to a copolymer comprising specific allylic monomers comprising alkylene oxide units, in addition to a sulfate and carboxylic acid containing monomers disclosed by the prior art.

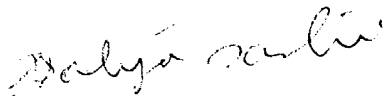
Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 212 1112.

Art Unit: 1713

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 212 1114.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 308-2351.



SATYA SASTRI

May 6, 2004



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700